REMARKS

Claims 4-12 and 14-20 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

CLAIM OBJECTIONS

Claims 9 and 16-18 stand objected to because of an informality in claim 9. By this amendment, the second occurrence of "light incidence plane" is deleted from claim 9. Accordingly, this rejection should be moot.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-3 and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lengyel (U.S. Pat. No. 5,576,134). This rejection is respectfully traversed. Notwithstanding, in order to expedite prosecution of the present application, claims 1-3 and 13 are cancelled.

Claims 4-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Saito (U.S. Patent No. 5,890,791). These rejections are respectfully traversed.

Regarding claim 4, a light source device is called for comprising a light emitting device and a lens which receives the light emitted from the light emitting device. Also, a light guide is called for that receives the light from the light source device. As illustrated in Fig. 2 of applicant's specification, the light source device 21 includes a light emitting device 43 and a lens 44a which receives the light emitted from the light emitting device 43. A light guide 4 is disposed adjacent the light source 21 and includes a light receiving plane which receives light from the light source device.

In contrast, the '791 reference teaches a light source 11 in the form of a cold-cathode tube. A light guide 12 is positioned proximate the light source 11. The light guide 12 includes projections 12b formed on a transmission surface 12a of the light guide 12. The light source 11 does not include a lens which receives light emitted from a light emitting device. The light source 11 only comprises a light emitting device. No lens is provided. The office action states that the lens is discussed at col. 7, lines 1-7. However, this discussion is of a comparison of the disclosure with a Fresnel lens. No such structure is disclosed in the reference. The office action fails to identify a component within the '791 reference comprising the claimed lens. It should also be noted that element 13 of the '791 reference is a light control sheet that illuminates the liquid crystal display element 14. Such a light control sheet cannot reasonably be interpreted as a light guide especially when the light guide 12 is provided for working in conjunction with the light control sheet 13.

In view of the foregoing, it can be appreciated that the '791 reference fails to teach a light source device comprising a light emitting device and a lens which receives the light emitted from the light emitting device as claimed. As such, the '791 reference cannot anticipate the subject matter as claimed. The relevant portions of the '791 reference can be found, at least, at column 6, lines 14-26 and Fig. 1.

Regarding claim 5, a light source device is called for which comprises a light emitting device and a lens which receives the light emitted from the light emitting device. A separate light guide is provided having a light receiving plane which receives the light from the light source device. These recitations are identical to those found in claim 4 and therefore the argument set forth above with respect to claim 4 are equally

applicable to the recitations of claim 5. As such, the '791 reference cannot anticipate the subject matter of claim 5.

Regarding claim 6, the lens first recited in claim 4 is further defined as any one of a semicircular pillar shape, a prismatic shape, or a partial circular pillar shape having a Fresnel lens surface. As stated above, the '791 reference fails to teach or suggest the lens recited in claim 4. As such, the '791 reference also fails to teach the further defined lens of dependent claim 6.

Regarding claim 7, the lens first recited in claim 4 is further defined as being provided adjacent the light receiving plane of the light guide. Inasmuch as the '791 reference fails to teach the lens of claim 4, the '791 reference also fails to teach the further defined lens of claim 7.

Regarding claim 14, the lens first introduced in claim 5 is further defined as being any one of a semicircular pillar shape, a prismatic shape, or a partial circular pillar shape having a Fresnel lens surface. Inasmuch as the '791 reference fails to teach the lens of claim 5, the '791 reference also fails to teach the further defined lens of claim 14.

Regarding claim 15, the lens first introduced in claim 5 is further defined as being provided adjacent the light receiving plane of the light guide. Inasmuch as the '791 reference fails to teach the lens of claim 5, the '791 reference also fails to teach the further defined lens of claim 15.

Claims 8-12 and 16-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shinohara, et al. (U.S. Patent No. 6,231,200). This rejection is respectfully traversed.

Regarding claim 8, an illumination device is called for which supplies light to a liquid crystal panel. The illumination device comprises a light source device which emits light, and a light guide having a light receiving plane which receives light from the light source device. The light source device comprises a light emitting device and a lens which receives the light emitted from the light emitting device. The office action states that the '200 reference discloses an illumination device 102 including a light source device 54 and a light guide 52. The office action then identifies a lens 12/103 but does not identify the lens 103 as being part of the light source device as claimed. That is, while the lens 103 is a part of the illumination device 102, the lens 103 is not part of the light source device 54 as claimed.

As illustrated in Fig. 2 of applicant's specification, a light source device 21 is provided with a light emitting device 43 and a lens 44a. The lens 44a is positioned adjacent a light receiving end 4a of a light guide 4. Advantageously, the claimed lens 44a of the light source 21 sets the directivity of the light exiting from the light source device to be high in the height direction in which the dimension of the light receiving plane of the light guide is small, and thus, the light from the light source device can be incident on the light guide as much as possible, thereby improving the efficiency of incidence of light on the light guide. Also, the directivity of the exiting light is set to be low in the width direction in which the dimension of the light receiving plane of the light guide is large, and thus uniformity of luminous intensity can be achieved. The '200 reference fails to do this because the light source 54 is shaped as a tube and only consists of a light emitting device with no lens. The lens 103 of the '200 reference cannot reasonably be interpreted as comprising part of the light source 54.

Regarding claim 9, an illumination device is called for which comprises a light source device which emits light and a light guide having a light receiving plane which receives light from the light source device. The light source device comprises a light emitting device and a lens which receives the light emitted from the light emitting device. These elements are the same as those recited in claim 8. As such, the arguments set forth above with respect to claim 8 are equally applicable to these recitations in claim 9. As such, the '200 reference cannot anticipate this subject matter.

Regarding claim 10, the lens first introduced in claim 8 is further defined as having one of a semicircular pillar shape, a prismatic shape, or a partial circular pillar shape having a Fresnel lens surface. Inasmuch as the '200 reference fails to teach the lens of claim 8, the '200 reference also fails to teach the further defined lens of claim 10.

Regarding claim 11, the lens first introduced in claim 8 is further defined as being provided adjacent the light receiving plane of the light guide. Inasmuch as the '200 reference does not teach the lens of claim 8, the '200 reference also fails to teach the further defined lens of claim 11.

Regarding claim 16, the lens first introduced in claim 9 is further defined as having any one of a semicircular pillar shape, a prismatic shape, or a partial circular pillar shape having a Fresnel lens surface. Inasmuch as the '200 reference fails to teach the lens of claim 9, the '200 reference also fails to teach the further defined lens of claim 16.

Regarding claim 17, the lens first introduced in claim 9 is further defined as being provided adjacent the light receiving plane of the light guide. Inasmuch as the

'200 reference fails to teach the lens of claim 9, the '200 reference also fails to teach the further defined lens of claim 17.

It should also be noted that claims 4, 5, 8 and 9 are amended to call for a lens facing the light guide so as to condense the light emitted from the light emitting device on the light guide. This change is for the purpose of clarifying the prior claim language.

REJECTION UNDER 35 U.S.C. § 103

Claims 12 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shinohara in view of Kawachi, et al. (U.S. Pat. No. 6,220,741). This rejection is respectfully traversed.

Claim 12 calls for the liquid crystal device according to claim 8 to further comprise a control circuit. Inasmuch as the '200 reference (Shinohara) fails to teach the liquid crystal device of claim 8, the '200 reference also fails to teach the further defined liquid crystal device of claim 12.

Regarding claim 18, the liquid crystal device according to claim 9 is further defined as including a control circuit. Inasmuch as the '200 reference fails to teach the liquid crystal device of claim 9, the '200 reference also fails to teach the further defined liquid crystal device of claim 18.

NEW CLAIMS

New claims 19 and 20 are added. These claims call for a positioning means (or a plurality of positioning pins) for precisely positioning the light source device

relative to an object. This feature is described at least in paragraphs [0044], [0094] and [0108] of the specification. Applicant respectfully submits that the positioning means is not disclosed in any of the cited references.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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ATTACHMENT FOR CLAIM AMENDMENTS

The following is a marked up version of each amended claim in which underlines indicates insertions and brackets indicate deletions.

4. (Twice Amended) An illumination device comprising:

a light source device which emits light; and

a light guide having a light receiving plane which receives light from the light source device and a light exiting plane which exits the light;

wherein the light source device comprises a light emitting device and a lens [which receives] facing the light guide so as to condense the light emitted from the light emitting device on the light guide;

wherein the lens has a property that provides directivity of exiting light in one direction that is higher than directivity of exiting light in a direction perpendicular to the one direction, the one direction being set to a height direction of the light guide, and the perpendicular direction being set to a width direction of the light guide, the lens having a constant cross-section along a first axis thereof and a varying cross-section along a second axis thereof, the second axis being perpendicular to the first axis.

5. (Twice Amended) An illumination device comprising:

a light source device which emits light; and

a light guide having a light receiving plane which receives light from the light source device and a light exiting plane which exits the light;

wherein the light source device comprises a light emitting device, and a lens [which receives] facing the light guide so as to condense the light emitted from the light emitting device on the light guide;

wherein the lens has a planar light incidence plane and a non-planar light exiting plane having a shape in which a height from the light incidence plane changes in

one direction, while a height from the light incident plane is constant in a direction perpendicular to the one direction, the one direction being set to a height direction of the light guide, and the perpendicular direction being set to a width direction of the light guide, the lens having a constant cross-section along a first axis thereof and a varying cross-section along a second axis thereof, the second axis being perpendicular to the first axis.

8. (Twice Amended) A liquid crystal device comprising:

a liquid crystal panel comprising a liquid crystal held between a pair of substrates; and

an illumination device for supplying light to the liquid crystal panel;

wherein the illumination device comprises a light source device which emits light, and a light guide having a light receiving plane which receives light from the light source device and a light exiting plane which exits the light; and

the light source device comprises a light emitting device and a lens [which receives] facing the light guide so as to condense the light emitted from the light emitting device on the light guide;

wherein the lens has a property that provides directivity of exiting light in one direction that is higher than directivity of exiting light in a direction perpendicular to the one direction, the one direction in which the exiting light has higher directivity being set to a height direction of the light guide, and the perpendicular direction in which the exiting light has lower directivity being set to a width direction of the light guide, the lens having a constant cross-section along a first axis thereof and a varying cross-section along a second axis thereof, the second axis being perpendicular to the first axis.

9. (Twice Amended) A liquid crystal device comprising:

a liquid crystal panel comprising a liquid crystal held between a pair of substrates; and

an illumination device for supplying light to the liquid crystal panel;

wherein the illumination device comprises a light source device which emits light, and a light guide having a light receiving plane which receives light from the light source device and a light exiting plane which exits the light; and

the light source device comprises a light emitting device, and a lens [which receives] facing the light guide so as to condense the light emitted from the light emitting device on the light guide;

wherein the lens has a planar light incidence plane and a non-planar light exiting plane having a shape in which a height from the light incidence plane changes in one direction, while a height from the light incidence plane [light incidence plane] is constant in a direction perpendicular to the one direction, the one direction being set to a height direction of the light guide, and the perpendicular direction being set to a width direction of the light guide, the lens having a constant cross-section along a first axis thereof and a varying cross-section along a second axis thereof, the second axis being perpendicular to the first axis.